

What is claimed is:

Sub 1

1. A method of laminating band-shaped uncured rubber materials to form a laminated rubber member having a given sectional shape by helically winding a band-shaped uncured rubber material extruded through an extruder on a rotating support, which comprises using two or more rubber compositions indicating different moduli after the curing as a rubber material fed to the extruder;

extruding a first rubber material through the extruder and helically winding it on the rotating support to form a first rubber layer; and

continuously extruding the first rubber material and a second rubber material through the extruder so as to stepwise or gradually increase a blending ratio of the second rubber material to the first rubber material while holding the same extrusion sectional shape and helically winding on the first rubber layer while overlapping with at least a part of the first rubber layer to form a second rubber layer.

Sub 2

2. The method according to claim 1, wherein only the second rubber material is successively extruded through the extruder while holding the same extrusion sectional shape and helically wound on the second rubber layer so as to overlap with at least a part of the second rubber layer to form a third rubber layer.

3. The method according to claim 2, wherein the second rubber material and a third rubber material are successively extruded through the extruder so as to stepwise or gradually increase a blending ratio of the third rubber material to the second rubber material while holding the same extrusion sectional shape and helically wound on the third rubber layer while overlapping with at least a part of the third rubber layer to form a fourth rubber layer.

4. The method according to claim 3, wherein only the third rubber material is successively extruded through the extruder while holding the same

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extrusion sectional shape and helically wound on the fourth rubber layer so as to overlap with at least a part of the fourth rubber layer to form a fifth rubber layer.

5. The method according to ~~any one of claims 1-4~~, wherein the rubber material extruded through the extruder as a band-shaped rubber member is helically wound on the rotating support along a rotating axial direction of the support so as to overlap at least widthwise edge portions of the wound rubber members with each other.

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6. The method according to claim 1, wherein two or more rubber materials have such a property that at least one of 100% modulus and 300% modulus after the curing differs by not less than 1.0 MPa between the two rubber materials to be extruded.

7. The method according to claim 1, wherein when two rubber materials are used as a rubber composition for innerliner for the cured tire, the first rubber material is at least one of an air-impermeable halogenated butyl rubber composition and butyl rubber composition, and the second rubber material is at least one of a natural rubber composition and a natural rubber based synthetic rubber composition.

8. The method according to claim 1, wherein among three rubber materials, the first rubber material is a rubber composition for a tread under cushion in the cured tire, the second rubber material is a rubber composition for a tread base, and the third rubber material is a rubber composition for a tread cap.

9. The method according to claim 1, wherein among three rubber materials, the first rubber material is a rubber composition for a bead filler in the cured tire, the second rubber material is a rubber composition for a sidewall and the third rubber material is a rubber composition for a rubber chafer.

Subcl

10. An apparatus for laminating band-shaped uncured rubber materials to form a laminated rubber member, comprising a rotatable support to be wound on its surface with a band-shaped uncured rubber material, an extruder feeding a band-shaped uncured rubber material to the surface of the support, and two or more rubber material feeding devices individually feeding two or more kinds of rubber materials to the extruder, in which each of the rubber material feeding devices is provided with a feed control means for weighing a weight of a rubber material and adjusting a feeding quantity of a rubber material per unit time.

11. An apparatus according to claim 10, wherein the extruder is provided with a control means for controlling feed time and feed stop time of the rubber material weighed through the feed control means to the extruder.

12. An apparatus according to claim 10, wherein at least one of the support and the extruder is provided with a moving mechanism capable of relatively moving along a rotating axis of the support.

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